**SHARIQ HAFEEZ**

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# Education

**University Of Michigan – Ann Arbor:**  Computer Engineering 05/2020

GPA: 3.938 / 4.0 University Honors, Dean’s List

Coursework: Data Structures & Algorithms, Intro Computer Architecture, Intro Logic Design,

Intro Signals & Systems, Microprocessor Toys, Discrete Math, Intro Circuits

Skills: C++, C, Verilog, Assembly (x86 & ARM), Python, Matlab, Git, LTSPICE

# Work History

**System Security Intern | C, Bash, Assembly** 05/2018 to 08/2018

*Marvell Semiconductor* – Marlborough, MA

* Enabled an enterprise SSD controller to boot over Quad-SPI, doubling memory transfer speed.
* Ported a WiFi Microcontroller BootRom over to GCC toolchain and automated build process with CMake.
* Composed memory map of code, data, stack, and heap segments in a linker script and wrote startup code to place exception vector table, enable cache, start timers, and initialize data and bss.

**Engineering Intern | C++** 04/2017 to 07/2017

*Intent Design* – Farmington Hills, Michigan

* Led a team in building a propeller thrust bench to determine feasibility of suspending a 15kg device.
* Interfaced a microcontroller with load cell, speed controller, and current sensor to analyze thrust and power consumption at various RPM.

# Project Experience

**Michigan Neuro-Prosthetics – Electronics Lead | C++** 09/2016 to Present

* Led a sub-team of 14 and collaborated with other leaders in creating the electronics for a 3D-printed prosthetic arm actuated by user’s muscle activity.
* Refactored signal processing algorithm to use machine learning to allow control of the device with

custom gestures.

* Currently integrating mobile app to supervise real-time training of neural net and modify user settings.

**IOT Home Security Suite | Python, C++** 12/2018 to 01/2018

* Developed door access control system to verify entries with facial recognition and RFID tags.
* Designed a camera to automatically detect and photograph personnel from nearby detected movements.
* Implemented projects using a raspberry pi and a microcontroller in conjunction with various IO and peripherals.
* Used Google Vision API, AWS for image processing and MQTT, email, and NoSQL database for message passing and data logging.

**Custom Processor Simulation & Assembler | C, Verilog, Assembly** 01/2017 to 04/2017

* Defined several instructions and datapath in RTL for a custom processor simulated on an FPGA.
* Wrote assembler and linker for the simplified assembly language for ELF format.
* Interfaced the FPGA with camera and H-Bridge to augment an RC car to follow a colored line, with all drivers and algorithms written in RTL or assembly.

# Extracurriculars

* Eta Kappa Nu (Honor Society of IEE) – Member
* Middle School Technology Club - Founder
* International Baccalaureate Diploma – Recipient
* Michigan Club Wrestling - Member